pain in the shoulder and along the bicipital groove; motion of the arm is painful, particularly extreme flexion of the fore-arm upon the arm; and when the forearm is supinated, flexion is almost, if not quite impossible. In those more advanced in years, the tendon may be weakened, presumably by senile atrophy or shoulder joint disease so as to require but a slight force to tear it through; the symptoms already described are much less marked in these cases, and some of them may even be wanting entirely; the snap of the breaking tendon is often not noticed by the patient; the pain and disability may be not marked, or may even be so slight as not to interfere with a continuance of his ordinary avocations. All cases show essentially the same deformity; the belly of the affected muscle is unnaturally full, so much as at times to suggest the idea of a tumor; above the swelling is an abnormal depression in which the tendon can be felt; the muscle, though apparently firmly contracted, is soft and flabby and the patient is unable to make it as hard as the muscle of the other arm. In case of a partial rupture, these indications are absent and reliance must be placed upon localized pain and tenderness and altered function of the muscle following an injury, which would in favorable cases be likely to cause a rupture. The treatment is rest; a circular bandage about the arm below the flaccid muscle will raise it up slightly and tend to relieve the ruptured tendon of all unnecessary weight. The elbow should be kept at the side and the arm in a sling. Pain and disability may persist for months, though this is rare, but eventually the function of the part is pretty sure to be restored. The torn end of the tendon acquires a new attachment upon which the muscle learns to act. Proof that such an arm will ever again be as strong as before the accident is lacking, but it is quite certain eventually to be a useful one. Such being the case, operative interference, such as laying open the joint and suturing the two torn ends of the tendon, is contraindicated.—*Boston Med. and Surg. Jour.* Nov. 25, 1886.

GENITO-URINARY ORGANS.

Nephrotomy and Nephrectomy. This was the order of the day on the second day of the last meeting of the French Congress of

Surgery. M. Le Dentu (Paris), in opening the discussion, remarked upon the superiority of the French statistics of nephrectomy. He then proceeded to discuss the cases where nephrotomy should precede nephrectomy, as follows;

1. In renal suppuration, in clearly limited suppurations, pyonephrosis proper, the operator has frequently to perform nephrectomy because the operation has been delayed too long. The exploration should be made under chloroform to relax the abdominal walls and render the examination more easy; when fluctuation is observed or that elasticity which is the next thing to it, incision is necessary. By operating thus in good time, a cure can be obtained without fistula, which is important in view of the difficulty of obtaining cicatrization of renal fistula.

2. In simple hydronephrosis. -

3. In multilocular cysts, even when they protrude toward the abdomen. If a fistula persists, there will always be time to perform nephrectomy, and this operation is then less dangerous, as is shown by statistics.

He objects to the straight incision of Simon because it does not give enough room. The L-shaped incision of Koenig, with the horizontal incision extending from the external border of the rectus and even to the umbilicus, is cutting the body half in two, and exposes the patient to eventration, for muscular suture is not without failure; in cases of very large tumors, removal piece-meal is preferable. The curved or oblique incisions are the best.

The different elements of the pedicle should be ligatured individually as far as possible. To facilitate the passage of the ligature, he had devised a curved needle with a large eye.

The application of transperitoneal nephrectomy is limited, especially as the lateral, retro-peritoneal operation of Thornton permits the kidney to be approached from the front; the detachment of the peritoneum is not serious. There are cases where the transperitoneal method seems indicated and where, however, the retroperitoneal method succeeds better. And perhaps floating kidneys will be amenable to nephrorrhaphy, which seems to be a good operation.

The communication closes with a report of three cases. One was

performed for a fistula of the ureter; the patient had been cured for five years. Another, undertaken for a calculus, was also followed by cure; but now the trouble had recurred on the other side. The third operation, for renal tuberculosis, had left two fistulæ. He remarks in conclusion that nephrectomy is a good operation and one of the most splendid achievements of surgery.

J. Lucas Championnière (Paris), had performed one nephrotomy with recovery, and three nephrectomies, with two deaths. The nephrotomy occurred in a woman, who had passed thirteen days without voiding a drop of urine; after nephrotomy, twenty-one days more passed without a single drop of urine being eliminated by the bladder; then the patient passed a calculus by the urethra, the course of the urine was re-established and the fistula healed up. Contrary to M. Le Dentu, he thinks that in these conditions, renal fistulæ cicatrize very rapidly.

Of the three nephrectomies, the first was done for pyelo-nephritis and terminated in cure. The second was done *in extremis* for suppurative nephritis, and the patient died of shock. The third was a transperitoneal operation for hydronephrosis; death supervened in two and one-half days by uræmia, the kidney of the opposite side being very small and insufficient. It is worthy of note that in the first case, there was but one kidney and that if nephrectomy had been done, she would surely have died.

With regard to the comparative value of nephrotomy and nephrectomy, the surgeon is often obliged to follow the first by the latter, in cases of suppurative nephritis or renal calculi for example. But should nephrotomy always be done first in pyonephrosis? It is useless in most cases, and it is preferable not to impose two operations on a patient, the more as the second is more difficult to perform antiseptically; but if the patient is debilitated, nephrotomy should be performed first, for nephrectomy determines a shock more grave than ovariotomy. In the matter of operative methods he agreed with Le Dentu.

M. Bouilly (Paris) had done four operations on the kidney. The first was for renal suppuration of very long standing; after nephrotomy, the cure was delayed until a purulent deposit in a cavity which, not-

withstanding great care to destroy all septa, had escaped him, opened spontaneously into the colon. Polycystic suppurations of the kidoey are frequent; all the cavities should be opened and, to attain this result, considerable incisions giving much light must be made. The second case occurred in a man æt. 20; a perinephritic collection was opened and the kidney denuded; pressure with a finger determined the bursting of two intra-renal caseous foci, which were scraped and dressed with iodoform, with recovery in forty days. The two nephrectomies were performed for very painful floating kidney. both patients being cured.

M. RELIQUET (Paris) had incised the kidney three times; once for cancer, once for abscess and once for renal suppuration consecutive to traumatism. In all cases, the geoeral phenomena were extremely grave and necessitated immediate intervention. The patients were suffering from excessive and continual renal colic; there was almost complete anuria, which disappeared after simple incision and improvement of the general state.

This singular fact of the reappearance of the urine immediately after section, had caused the speaker to inquire if in cases of grave nephritic colic, when the affection seems to have become almost positively fatal, the affected kidney should not be incised; he would not hesitate to do so.

In one case the right kidney was full of calculi; on the left side there were two kidneys and two ureters.

M. DEMONS (Bordeaux) had operated upon the kidney three times; the first was a nephrotomy for pyonephrosis and the patient died of exhaustion. He thinks that in cases of pyonephrosis with perinephritic abscess, he would prefer nephrectomy. The second case was a perinephritic abscess and fistula through an intercostal space, consecutive to a wound; retro-peritoneal nephrectomy cured the patient. The third was a renal sarcoma, which had been supposed to be an ovarian cyst; the operation was transperitoneal, there was no drainage, and the cure supervened uninterruptedly. He considers ligature of the pedicle *en masse* entirely sufficient and isolated ligature of the ureter useless.

M. MALHERBE (Nantes) reported a case of nephrectomy for pyonephrosis, in the course of which the peritoneum was opened to an extent of five or six cm. without harm; rather abundant suppuration delayed the cure, which was not complete until after four months.

M. SCHWARTZ (Paris) reported a case of renal abscess which pro jected only toward the abdomen; it was opened by the transperitoneal method and rapid cure ensued.

M. JEANNEL (Toulouse) reported a case where, the patient presenting symptoms of internal strangulation, laparotomy was performed, disclosing a tumor of the kidney which had penetrated between the layers of the mesentery; nephrectomy showed that the descending colon had been compressed by the tumor; the patient died of shock.

M. PEAN (Paris) had performed seven operations, six successfully; the seventh died of uræmia, the other kidney being insufficient. For floating kidney, he thought that nephrorrhaphy was often sufficient treatment. He preferred lumbar section wherever it was applicable, *i. e.* in small tumors and those which can be subdivided; for large tumors, he prefers the transperitoneal operation and makes the incision in the linea alba. He always treats the pedicle by first applying forceps, resecting the tumor, and then applying the ligature.

J. BŒCKEL (Strasburg) had performed nephrectomy once by lumbar incision—this remarkable case may be found in detail in the ANNALS OF SURGERY, vol. i., page 73—and once by the transperitoneal method *for hydatids of the kidney*. Nephrectomy for hydatid cyst has been performed but three times; the patients of Spiegelberg and Hæckel both died very soon; this case was more favorable, the kidney having suffered a displacement which had rendered it to a certain extent mobile, and the cure was complete in six days. The incision was in the linea alba; the pedicle ligatured in three fasciculi and the edges of the lumbar peritoneum were not sutured. The diagnosis was not positive and the presence of a large tumor in the abdomen, alone determined the laparotomy. In case of hydatid cyst, nephrectomy should be done as early as possible; if exploratory laparotomy shows that it is impracticable, the cyst should be incised and the sac sutured to the abdominal wall.

M. SEGOND (Paris) had performed nephrectomy twice; the first occurred in a woman. æt. 45, with a very large and painful tumor and a very grave general condition, lumbar section and subcapsular enucleation being performed; before reaching the kidney, it was necessary to traverse five or six centimeters of fatty, lardaceous and vascular tissue from which considerable hæmorrhage proceeded; in spite of ligature, so much hæmorrhage proceeded from the pedicle that forceps were applied, immediately after which the bleeding became formidable but was controlled by tamponing the cavity; he emphasizes the fact that it was the forceps—*pince à kyste*—that determined the hæmorrhage; notwithstanding an intercurrent attack of erysipelas, the patient recovered. The second case was a transperitoneal operation for floating kidney, the operation lasting fifteen minutes and the patient getting up on the fifteenth day.

U. TRELAT (Paris) dwelt upon three points, (1) the choice between nephrotomy and nephrectomy, (2) the question of extra- and intraperitoneal operations and (3) subcapsular enucleation.

Certain cases positively indicate nephrectomy; such are persistent fistulæ, neoplasms which must be extirpated, and floating kidneys. The indication is not so clear in other cases, such as renal calculi and their consequences, hydro- and pyo-nephrosis, etc. To-day the indications for operation cannot be positively settled; however in case of tumors characterized by localized pain in the region of the loins and projecting there, the incision should be made in the lumbar region in such a way as to permit a simple nephrotomy, if this is sufficient, or a nephrectomy, if necessary; the lumbar method in such a case becomes logically unavoidable; neither the transperitoneal nor the paraperitoneal methods are proper.

If a neoplasm or a fistula be in question, the choice of method is more uncertain; there are no determining reasons for one more than the other, but in certain cases the diagnosis is doubtful or erroneous and the abdominal location of the tumor leads to laparotomy and the transperitoneal operation. While the method is not to be absolutely rejected, it should be used with reserve.

Certain renal tumors, instead of projecting into the abdomen or

loins run along the peritoneum, skirt the abdominal wall and really project beyond on the side. In these cases, the paraperitoneal method of Langenbuch is good; consisting of an incision at the external border of the rectus muscle, or better a little external to it—because the peritoneum is particularly adherent and difficult to manage at that point—and making a way between the peritoneum and the abdominal wall.

For choice of procedure then, the cases divide themselves into two classes, (1) the inflammatory cases in which the lumbar incision is proper, and (2) all other cases, in which the indication is less positive and more variable.

But whatever method be followed, the kidney has to be separated from surrounding parts. In certain cases, the cellulo-fatty envelope is thickened, indurated and vascularized, and the enucleation of the kidney is extremely difficult, in which case, the subcapsular method is necessary. He had lost one patient, whom this method would have saved; after removing the gland, a little blood continued to ooze from one corner and a pair of hæmostatic forceps were applied and removed the next day; the patient died on the seventeenth day because the contact of the forceps with the intestine had determined a stercoral fistula. The subcapsular method would have saved the patient, as it did in a later case. He concludes as follows:

1. A great many cases imperatively demand the lumbar method with preliminary nephrotomy.

2. Other cases demand nephrectomy, and sometimes the transperitoneal, sometimes the paraperitoneal, and sometimes the lumbar operation is to be preferred.

3. Whenever the cellulo-fatty envelope of the kidney is indurated, subcapsular enucleation is demanded.—*Revue de Chirurgie.* Nov. 1886.

II. **Subcapsular Nephrectomy.** M. OLLIER (Lyon) spoke of this procedure, by which he meant the enucleation of the kidney from its capsule. He was drawn into this procedure accidentally; finding, in course of a nephrectomy, a cellulo-fatty envelope so thick

and resistant that he could not detach the kidney; whereupon, he cut a little deeper and enucleated it from its capsule with the greatest facility; since then, he has performed the operation in three cases of pyelo-nephritis and one of tuberculosis. The enucleation should be made slowly and with care, in which case it is easy and hæmorrhage need not be feared. Subcapsular nephrectomy is not applicable to all cases; if the kidney is small and healthy, it is better to extricate it from its fatty envelope; the question is more delicate in acute affections, for we know little of the adhesions established between the kidney and its capsule in these affections; he determined acute nephritis in dogs; at the end of three months there certainly were adhesions established between the kidney and its capsule; nevertheless subcapsular enucleation produced less hæmorrhage than detachment by the other method. In chronic cases, he would have no hesitation in adopting it. The method has general and particular advantages; the chief of the latter is ready separation in cases where the fatty envelope is indurated; it is well known that in these cases of fibro-lardaceous thickening, the fatty envelope is very vascular. Extirpation by the ordinary method is then not only very difficult but dangerous, for it exposes the subject to grave hæmorrhage, which is avoided by the subcapsular method. The general advantage of the method lies in the fact that the operation is farther from the peritoneum, avoiding peritonitis by propagation. This method is then especially valuable for large tumors; naturally it is contraindicated in cases of neoplasm, since in these cases the extirpation should be as comprehensive as possible.

In general, he advocates plenty of room, and does not fear large incisions; unlike M. Le Dentu, he believes that muscle sutures may be of great service. There are cases where, in spite of free incisions, the kidney cannot be removed; then the twelfth rib should be resected; he had seen one case where the ilio-costal region was but three cm. in height; in such a case he would not hesitate to resect the eleventh rib also, which operation, performed subperiosteally, does not involve serious danger.—*Revue de Chirurgie*, Nov. 1886.

III. **Suprapubic Cystotomy for Sarcoma of the Bladder.** By F. LANGE, M. D. (New York). A man æt 53, always previously

in good health, had suffered for four or five years from hæmorrhage after micturition, usually small in amount, but at times quite abundant, and latterly small fleshy lumps had been discharged. Microscopic examination of one of these lumps showed numerous disintegrated cells of pretty large size in advanced fatty degeneration; only the rather large nuclei could be distinguished with certainty; another smaller piece brought out in the eye of the catheter, showed distinct papillary structure with a regular lining of columnar epithelium. Neither by palpation through the rectum nor by means of the catheter could the existence of a tumor be corroborated. On suprapubic section, notwithstanding a balloon in the rectum filled with 250 cc. of water, and about 300 cc. of boracic solution in the bladder, and later, the addition of still more fluid in both cavities, the bladder failed to rise noticeably above the pubes; the peritoneum had to be stripped back, and it was observed that the bladder was very flabby and apparently paretic. The patient was then brought into the elevated pelvic position of Trendelenburg, which causes the bladder to become distended by negative pressure, like the vagina in Sims' position, the intestines retiring toward the diaphragm; with light from above and a sufficiently large vesical opening, even the posterior wall of that organ became easily accessible. The tumor was found about one cm. behind the right ureter, and did not occupy an area larger than two cm. in diameter; it was flat and its superficial layers were soft and easily yielded to the sharp spoon; it was thoroughly scraped, and then the basis with some apparently healthy tissue all around, extirpated. Microscopical examination showed a small round-celled sarcomatous mass, in the midst of which bulbs of large-celled sarcoma were to be seen; these had no connection with the small-celled sarcoma and, while in some places they are completely mixed and interwoven with the small cells, only the bulbs of the large cells had distinct boundaries; the preponderance of small cells entitled the neoplasm to be called a small-celled sarcoma. The operator had been able to find no recorded instance of such a tumor of the bladder, those described all being fibro-sarcomata. The wound was stitched with dry iodoform catgut sutures; the anterior section in the bladder was likewise closed by catgut

sutures, which did not pass through the mucous membrane; the lower portion of the abdominal opening was left open and loosely packed with iodoform gauze. A Nelaton catheter, permanently left in the bladder became repeatedly clotted with blood especially about the fourth or fifth day, when there occurred some hæmorrhage from the bladder, which was easily checked by cold injections and *tinct. ferri mur.* Not a drop of urine escaped through the abdominal wall and, at the end of two weeks, the patient was sent to his home.

As a result of the distention with the rubber ballon, the anterior wall of the rectum was ruptured about three-quarters of an inch above the anus but happily the peritoneum was not torn. To obviate this accident, the operator advised balloons of thinner and softer rubber and of greater length.

Dr. Lange had used suture of the bladder after suprapubic section in five cases, in four of which the operation was for stone. In all of these cases, primary union had taken place and no urine had escaped through the abdominal wall. He thought it a point of some importance that the mucous membrane should not be taken into the suture and that fine needles and thin thread should be used, the latter being the dry iodoform catgut which, after being soaked within the suture canal, will exactly fit it and not easily allow the entrance of urine; he always applies the first and last sutures exactly corresponding to the upper and lower angles of the wound, or rather beyond it, and ties the sutures while some light traction on the edges of the wound is made parallel to the direction of the wound. The elastic wall of the bladder will afterward become shorter and thicker, and the closure of the wound will be a very accurate one.—*N. Y. Surg. Society* Nov. 8, 1886.

IV. Suprapubic Cystotomy for Sarcoma of the Bladder. By ROBERT F. WEIR, M.D. (New York) A man, æt. 35, had suffered from several severe recurring hæmorrhages of the bladder; exploration with a sound revealed nothing decisive, although the urine twice became almost jellied from effused fibrin, a condition considered by some pathognomonic of a tumor, but which the author has found in a case of

cystitis for which perineal cystotomy was done and in which no tumor existed. Examioation by the rectum under ether revealed a resisting mass to the left of the median line, and the resistaoce to the movements to the left of a sound rather forcibly used, coofirmed the diagoosis. The rectum being distended by the water-bag, aod the bladder filled with seven ouoces of 1-20,000 bichloride solution, which caused all the lower part of the abdomen to bulge forward and secured percussion-duloess for nearly two and a half ioches above the symphysis, the abdominal wall was then incised; after the division of the linea alba, and during the dissection of the prevesical fat with the handle of the scalpel, there was rather profuse bleeding from numerous small veios, which required ligature. The bladder was then incised, and ao irregular, reddish, friable tumor, pressed forward by the disteotioo of the rectum, at once became apparent. The mass was so soft that it broke down in the attempts to remove it, causing considerable oozing of blood, promptly arrested, however, by the pressure of a sponge; the attachment of the tumor, which microscopical examination afterward showed to be a sarcoma, was about three-fourths of an inch in diameter, circular in shape and with depressed and irregular edges. It was thoroughly and forcibly scraped with a sharp Volkmann's spoon; considerable bleeding came from the adjaceot mucous membrane, which somewhat interfered with the precision of the operation, but was fioally checked by pressure and hot sublimate douches aod more particularly by the emptyiog of the rectal dilator. The wound was not stitched, but, a draioage-tube being introduced, the edges of the wound were packed with sticky iodoform gauze and a loose aotiseptic gauze dressing applied, through which the drainage-tube ran. Patient passed on to a good recovery, but six weeks later, he suffered from obstruction which was relieved by the giving way of the lower end of the cicatrix and the establishment of a small suprapubic urinary fistula which has continued with occasiooal closures. When last seen, about five and a half months after the operation, a decided increase in prostatic fulness on the left side could be felt, which together with his emaciation, told that recurreoce had uodoubtedly taken place, although there had been no further hæmorrhage. In connectioo with this case,

the author remarks, (1) in view of the difficulties that arose from wounding the veins immediately external to the bladder, it would be better, when a vein is exposed, to pass a double ligature under it, tie it and then divide it between the ligatures; should the bleeding be free from small vessels, instead of stopping to secure these and thus disturbing the connective tissue in front of the bladder all the more, it would be wiser to open the bladder and relieve the congestion, when the hæmorrhage will cease. (2) Referring to the danger of rupture of the bladder, the writer reviews the results of Pousson and Dittel, and advocates filling the rectal balloon (which should be done first) slowly, and as soon as decided resistence was felt, forcing no more in; he was unwilling because of the danger of vesical rupture, to inject into the bladder as much as eight or ten ounces, as advocated by Thompson, and halted at seven ounces. Next, referring to the danger of rectal rupture as illustrated in the case of Lange, he expressed a belief that no more than ten ounces of fluid need be used, and he had contrived a rubber bag with fine silk meshes outside, like the middle bag in the Paquelin cautery apparatus, to limit the distention of the contained rubber to a circumference of seven and a half to eight and a half inches, which his investigations had shown to be the limit of safe rectal distention. (3.) While suture of the wound has often been successful, the author has too frequently seen the irritation or plugging up of a retained catheter cause it to fail in its desired end, to trust to it in a suprapubic cut. (4.) Should any suppuration of the prevesical tissue occur and be detected, drainage should be essayed by carrying downward a long dressing forceps behind the pubes, and cutting on its point in the perineum; and by pulling through this track a tube sufficiently large for the easy flushing and draining of the gravitating pus and urine.—*Med. News*, Dec. 4, 1886.

V. Treatment of Stone in the Bladder. By A. T. CABOT, M. D. (Boston, Mass.) This paper is based upon the following twenty-four operations:

	Age.	Sex.	Duration of Symptoms.	Operation.	Stone.	Weight in Grains.	Result	Remarks.
1	65	M	4 or 5 months	Litholapaxy	Phosphatic	270	Recov	Multiple Calculi
2	66	M	3 or 4 months	Litholapaxy	"	127	"	Multiple Calculi. Recurrence of No. 1.
3	10	M	Since infancy	Lateral Lithotomy	Calcic Oxalate	132	"	
4	69	M	1 year	Litholapaxy	Phosphatic	98	Died	Death from bronchitis
5	53	M	2 or 3 years	"	"	78	Recov	
6	61	M	1 year	"	"	94	"	
7	67	M	5 months	"	"	121	"	Stricture divulsed
8	73	M	2 or 3 years	"	"	20	"	
9	57	M	A few weeks	"	Uric Acid	10	"	
10	20	M	6 months	"	Phosphatic	113	"	Nucleus, a leather shoe-string which had been used as a bougie.
11	67	M	1½ years	"	Uric Acid	150	"	Epididymitis, etc.
12	47	M	1 year	"	"	80	"	
13	60	M	1 year	"	Phosphatic	140	"	Recurred 5 m'ths later.
14	50	M	2 months	"	Uric Acid	23	"	Multiple calculi; recurrences.
15	75	M	3 months	"	"	19	"	Recurrence,
16	74	M	9 months	"	Phosphatic	34	"	Recurrence of No. 8, with a retained fragment as a nucleus.
17	70	M	1 or 2 years	"	Uric Acid	143	"	
18	48	M	2 years	"	Phosphatic	68	"	Stricture divulsed.
19	55	M	2½ years	"	Uric Acid	225	"	
20	68	M	1½ years	"	Phosphatic	265	"	
21	49	M	8 years	Suprapubic Lithotomy	———	1180	"	Stricture and false passages.
22	53	F	Several years	Litholapaxy	Phosphatic	140	"	
23	60	M	5 or 6 months	"	"	95	"	Prostatotomy done at the same operation.
24	63	M	5 or 6 months	"	"	79	"	

He concludes that litholapaxy should be performed in all ordinary adult cases except when (1) a very large and hard stone may resist every attempt at crushing; (2) a stone may have as a nucleus a foreign body, such as a piece of necrosed bone or a bullet, too hard to crush and too large to come through a tube; (3) an encysted stone may be out of reach of the lithotrite; (4) some writers think that stricture of the urethra may prohibit litholapaxy, but this cannot often happen, for strictures, however close, yield readily to divulsion, which may be immediately followed by the crushing and evacuation of the stone; while this procedure economizes time, it also saves the patient much needless manipulation; (5) false passages may exist, which so interfere with the introduction of instruments that the dangers of the operation are greatly enhanced and the question of lithotomy is to be entertained; (6) the hip may be ankylosed in a position such as to interfere with the use of urethral instruments. Supra-pubic lithotomy is to be employed in cases where the stone is too large or too hard to be crushed, where an impervious stricture makes the introduction of a lithotrite or staff impossible, or in case of an encysted stone. Perineal lithotomy may be reserved for occasional use upon stones of moderate size where false passages or ankylosis of the hip makes litholapaxy impossible, or where a stone has a foreign body as a nucleus; it is possible that supra-pubic incision may eventually prove to be the best for even these cases, but at present, the percentage of recovery after lateral lithotomy in cases of small calculi is better than in the high operation. The treatment of stone in children is unsettled, the weight of evidence balancing between the three methods and rather inclining toward the lateral operation.

Recurrence of stone.—A. A uric acid stone may be followed by another on account of the persistence or reappearance of the uric acid diathesis; cases 14 and 15 are examples of this. *B.* A soft phosphatic stone may be reproduced after removal, if the chronic cystitis and alkaline condition of the urine persist which led to its original formation; this is not infrequently seen in those cases where an obstruction to the complete emptying of the bladder perpetuates the fermentation of the urine; cases 1, 2 and 13 belong to this class. *C.*

Sometimes the successive escape of several stones from the kidney gives rise to several consecutive attacks of stone in the bladder. *D.* Lastly, if a fragment is left after an operation, it may serve as a nucleus for another stone, as in case 16; as a guard against such retention of fragments after litholapaxy, the bladder should always be washed out with the evacuator one or more times after the operation, before discharging the patient, which can readily be done without ether; in using the pump, the sacculated character of many bladders should be remembered, and a careful search should be made, lest a fragment be caught and held in some side pocket; the orifice of the evacuating tube should be turned successively toward each part of the cavity, in order to dislodge with the current any such fragment.—*Boston Med. and Surg. Jour.*, Dec. 2 and 9, 1886.

ULCERS, TUMORS.

I. The Cure of Large Ulcers of the Leg by the Carbolized Spray. By GILLES DE LA TOURETTE (Paris). This paper presents in detail three cases of stubborn ulcers of the leg in inmates of the *Infirmerie des Incurables* connected with the service of Charcot. The general condition of the patients was of the worst description. The first was an extremely debilitated and emaciated subject of asthma conjoined with chronic bronchitis, 69 years old, presenting an enormous ulcer covering the whole right leg, from the malleoli to within an inch of the tuberosity of the tibia. The carbolic spray for an hour and a half morning and evening, with intermediate dressing with borated vaseline, caused a complete cure in less than a month. The second was an ulcer, 18 centimeters high, covering the lower half of the leg in a patient 82 years of age, feeble and senile and the subject of chronic bronchitis. Carbolized spray for two hours twice a day with borated vaseline dressing in the intervals, secured a complete cure in about six weeks. The third case occurred in a syphilitic subject, with mitral insufficiency, tertiary syphilis and chronic bronchitis, aged 59. with a vast ulcer, 22 centimeters long, enveloping the whole leg. Carbolic spray applied during the next six months had brought the ulcer down to about the size of a six sous piece when the patient died by